Ethics and Social Responsibility in the Life Sciences

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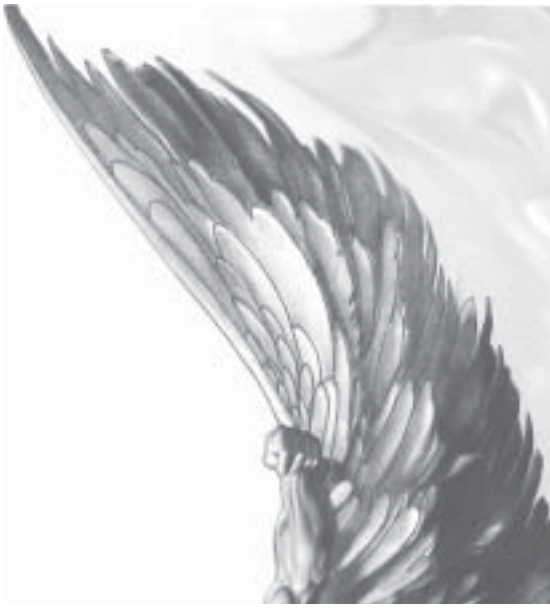
Technological breakthroughs in biotechnology raise a host of challenging social, ethical, and political questions. Using a review of Rahul Dhanda's 2002 book, *Guiding Icarus: Merging Bioethics with Corporate Interests*, as a starting point, this paper explores the place for scientists in public debates. Focusing on four cases of contentious biotechnologies—GM foods, DNA data-banking, personalized medicine, and stem cell research—Dhanda's innovation is to show the perspective of an industry insider. As a scientist and director of the bioethics program at Interleukin Genetics, his writing is accessible and informative both to scientific researchers and to humanists and social scientists concerned with the socio-ethical implications.

The take home message from *Guiding Icarus* is that integrating ethical considerations into a company's daily operations will be good for business. By paying attention to the potential ethical problems and ensuring that research and product development are conducted ethically, companies can better manage their research programs, minimize negative public reactions, and maintain government and investor confidence. Moreover, a company that internalizes ethical principles (e.g. equitable treatment of employees) as part of its corporate structure will more likely retain its highly trained and valuable employees—working in an ethically sensitive company can be an important "benefit."

But one might reasonably ask, why should a company pay attention to ethics or social responsibility when its primary mandate is to increase shareholder value through profit- generating activities? Surely it would be "unethical" (and even fiscal suicide!) for a company to put other considerations before profit? This classic view of corporate responsibility is, according to Dhanda and many others working in the field of business ethics,[1,2] insufficient for a number of reasons. One important reason to take ethics seriously is that citizens (whether shareholders or members of the public), are demanding greater corporate accountability for the promises for new technologies, along with sensitivity to social, political, and environmental concerns.

Since at least the 1970s, there has been mounting public distrust of corporate, government, and scientific assurances about the safety and effective oversight of new technologies.[3] Very public disasters such Three Mile Island and Chernobyl, tainted blood supplies (HIV, hepatitis), and "mad cow"/BSE have been tied to concerns about corporate scandals (Enron/ImClone) and the increasing influence of pro-industry and economic agendas in the shaping (and corruption) of objective "public interest" science.[4,5] This has contributed to the formation of public advocacy and activist groups and NGOs (e.g. Greenpeace, ETC Group, various consumer's associations), and a willingness on the part of certain consumer groups to challenge governments and industry by engaging in political lobbying and consumer boycotts.

This activism and apparent rejection of the promises of some areas of science and technology should not, however, be taken as evidence of a technophobic society. Indeed, there continues to be widespread positive public regard for most scientific discoveries and technologies that appear to have both a clear benefit (or potential for benefit) and minimal or at least well understood risks. In contrast to GM foods, for example, biotechnologies that appear to improve health care, such as genetic diagnostics or bio-pharmaceuticals, enjoy strong public support. Yet when the benefits are dubious and the risks are potentially very serious and not well understood, then as with the case of GM foods in Europe, the public as consumers of new technologies may be very wary.[6] This wariness will also, to some extent, be the result of often inflammatory and polarized discussions in the media about the harms (but also the hoped-for benefits) of new technologies. The lesson for the biotechnology industry, according to Dhanda and others, is that to be seen as socially beneficial, capable of self-regulation, and worthy of public support, then industry must also be socially responsible.[7] Dhanda does not specifically extend this argument to academic or industry scientists, choosing instead to focus his attention on the need for ethical reflection on biotechnology on the part of corporate executives. Nevertheless, I propose that an analogous argument be made for scientists and technologists.



Science responsibility

Discussions about the ethics of science and scientific responsibility are not new. Since at least the time of the Manhattan project and the race to build the first atomic bomb in the 1940s, members of the international scientific community have questioned the social, ethical, and political implications of their research. In the medical sciences, for example, this self-reflection led to the development of codes of ethics such as the Nuremberg Code and the Declaration of Helsinki, also backed by national and international laws, enshrining basic ethical principles to ensure the protection of patients and human subjects participating in research. Alongside these broader national and international policies, individual scientific and professional communities have also developed internally oriented codes of ethics.

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Most professions—whether they are formally licensed and self-regulating (e.g. medicine, nursing, engineering, accounting), or voluntary unlicensed associations (e.g. academic lecturers or disciplines such as physics or sociology)—have codes of ethics. For example, chemists who are members of the Canadian Society for Chemistry are bound by a code of ethics to practice their profession in a way that embodies the highest standards of honour, honesty, and integrity.[8] But beyond prescribing somewhat abstract standards of personal integrity and professionalism, codes of ethics often also embody socially oriented standards; the CIC's code, for example, calls on chemists to "place the health, safety, and welfare of all persons, and the reputation of their profession, above any consideration of self-interest, and resolve any conflicts in favour of the public good." In this statement, we see an understanding that chemists, as members of a specialized profession that seeks to be worthy of public confidence and respect, have a duty to conduct research and practice their profession in a manner that is socially responsible. In other words, chemists, and scientists more generally, cannot claim that their practice of science is ethically neutral and that difficult socio-ethical issues only arise once the science is deployed by technologists. Science and technology must be seen as inextricably tied into broader social, cultural, and political contexts, and raising important socio-ethical questions.[9]

To return, then, to the earlier examples of failures of regulation and oversight of science and technology (GM foods, BSE, nuclear accidents), it is clear that the involvement of government, academic, and industry scientists in these and other debacles, alongside very public examples of conflict of interest (e.g. in drug company-sponsored medical research), has gone a long way towards undermining public trust in scientists. Unethical behaviour is harmful not only to the general public, but also to the trust that the public places in the scientific professions. In order to maintain public trust, scientists and technologists must demonstrate that they subscribe to and practice the highest standards of scientific and professional integrity, and that their respective professions never condone unethical conduct. Proof of this trustworthiness comes, in part, when professional associations make their processes, policies, and codes of conduct transparent and promise accountability, along with encouraging their membership to act responsibly. But it will also be crucial that scientists accept the public nature of their research, and thus their social responsibility as scientists. This is not to say that each individual scientist should reflect on the socio-ethical ramifications of every experiment or procedure; most basic research will simply not raise difficult social or ethical questions. Nevertheless, I would argue that scientists as experts, professionals, science educators, and citizens have an obligation to reflect on and engage science students and the public in discussions to determine the potential benefits and risks and socio-ethical challenges posed by scientific and technological developments.

This public engagement must, however, be more than just "P.R." If real long-term enthusiasm for science and technology is to be enlisted, then genuine public engagement is essential. How to do this is of course not an easy question, and the need for dialogue should not be allowed to be mistaken for a need for persuasion[10]—we must be wary of seeing the public as merely deficient in scientific education.[11] If the public is to be engaged, we must strive for sufficient public understanding in pursuit of meaningful public participation.[12] Attempts at public engagement by scientists can be seen in recent discussions on the social and ethical challenges posed by nanotechnology.[13,14] Scientists and other academics in the U.K., for example, have taken a lead in preparing reports to evaluate the implications of nanotechnology, while the U.K.'s Royal Society is conducting a broad public consultation about this area of research.[15]

As Dhanda argues in *Guiding Icarus*, there is an important place in industry (and I would argue the sciences as well) for experts in ethics and the social sciences to explore the challenges posed by new technologies. But these discussions must also include the active participation of scientists, to reflect not only on the challenges of particular technologies, but on the very professions, cultures, and institutions that enable technology development. Scientists cannot afford to allow unethical behaviour to occur within their professions, nor can they sit back and let others lead the discussions of the socio-ethical implications of science.

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References

For a full list of references, please visit the author's Web site at www.genethics.ca/personal/ACCNrefs.html.

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